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Contemporary Analysis of ESG Bonds in Indian Corporate Finance: Trends, Frameworks, and Market Impact

Kumar S[1], Dr.Muhammed Riyas [2]
[1]kumar.e26@sibm.edu.in,
[2]muhammed.riyas@sibm.edu.in.

ABSTRACT
This paper reviews the evolution of ESG bonds in India, focusing on SEBI's 2025 ESG Debt Securities framework and Larsen & Toubro's (L&T) landmark issuance. It contextualizes India's developments against European benchmarks such as the EU Taxonomy, CSRD/ESRS, and ESMA oversight of ESG ratings. The study consolidates interim findings, evaluates market reception, and provides a comparative analysis to highlight implications for corporate issuers and investors.

INTRODUCTION:

India's ESG debt market has grown rapidly, reaching ~USD 55.9bn in aligned GSS+ instruments by end-2024, dominated by green bonds (~83%). SEBI's 2025 framework formalized Social, Sustainability, and SLB instruments, mandating clear objectives, SPOs, and post-issuance KPI/SPT reporting. L&T's issuance of India's first SEBI-compliant ESG bond in June 2025 marked a significant milestone, demonstrating corporate readiness and investor confidence.

Despite this growth, India's sustainable finance market still faces significant funding gaps, particularly in green infrastructure and sustainability-linked bonds (SLBs). According to recent market data, India's green infrastructure financing needs are estimated to exceed USD 1 trillion by 2030, yet the current ESG debt market covers only a fraction of this demand. SLBs, which incentivize performance improvements through KPIs, remain underutilized, reflecting challenges in corporate adoption and market awareness.

This paper explores these dynamics, emphasizing the importance of SEBI's framework in addressing funding gaps and fostering market development.

India's ESG Debt Landscape

Total aligned GSS+ issuance	~USD 55.9bn (end-2024)
Green bonds	~83% of total
Green loans	~USD 5.5bn in 2024 across 19 companies
Social bonds	~USD 5.5bn in 2024; cumulative ~USD 6.6bn
Social loans	USD 1.8bn in 2024 via NBFCs
Municipal Bonds	Sovereign and municipal issuances (e.g., Vadodara, Ahmedabad) catalyzed corporate participation

Literature Review: India's ESG Debt Landscape

Recent academic research over the past three years highlights the rapid evolution and challenges of India's ESG debt market. Studies indicate a growing investor appetite for green and social bonds, yet emphasize the need for improved ESG disclosure and standardized KPIs to enhance market credibility. For instance, Zairis, Liargovas & Apostolopoulos (2024) underscore the importance of regulatory frameworks in shaping sustainable finance markets, while Negi, Jaiswal & Rekunenko (2025) analyze the positive impact of green bonds on corporate value creation in India.

Market data corroborates these findings, with the Climate Bonds Initiative reporting a market size of approximately USD 55.9 billion in aligned GSS+ instruments by end-2024. Despite this growth, challenges remain in expanding SLB issuance and integrating ESG metrics into corporate financing strategies. This literature synthesis provides a foundation for understanding India's ESG debt landscape and informs the subsequent case study and framework analysis.

SEBI's ESG Debt Securities Framework (2025) and Comparative Benchmarking:

SEBI's ESG Debt Securities Framework, introduced in 2025, represents a pivotal regulatory milestone aimed at standardizing and enhancing transparency in India's ESG debt market. It covers Social, Sustainability, and Sustainability-Linked Bonds (SLBs), mandating clear objectives, pre-issuance disclosures, independent Second Party Opinions (SPOs), and rigorous annual KPI/SPT reporting with assurance. The following table provides details about SEBI Framework compared ICMA (Global) and CSRD (EU).

Aspect	SEBI Framework (India)	ICMA Principles (Global)	EU Taxonomy & CSRD (Europe)

Scope	Social, Sustainability, and SLBs	Green, Social, Sustainability, SLBs	Environmental, Social, Governance disclosures
KPI/SPT Requirements	Mandatory, with SPO and annual reporting	Emphasis on ambitious, measurable KPIs/SPTs	Science-based targets, double materiality
Assurance	Internal + external limited assurance	External verification encouraged	Mandatory external assurance
Taxonomy Alignment	Encouraged, aligned with ICMA and EU standards	ICMA Green Bond Principles widely adopted	EU Taxonomy mandatory for environmental claims
Reporting Frequency	Annual post-issuance reporting	Annual reporting recommended	Annual and periodic sustainability reports

To effectively navigate SEBI's ESG Debt Securities Framework, corporates should:

Align Enterprise Objectives	Integrate ESG goals with overall business strategy
Select Appropriate Instrument	Choose between Use of Proceeds (UoP) bonds or SLBs based on financing needs and ESG ambitions
Design Meaningful KPIs/SPTs	Develop measurable, ambitious, and relevant performance indicators
Obtain Independent SPO	Engage credible external reviewers to validate ESG credentials
Publish Transparent Disclosures	Ensure pre-issuance and ongoing reporting are clear and accessible
Implement Robust Governance	Establish data collection, monitoring, and assurance processes
Engage Stakeholders	Communicate ESG commitments and progress to investors and the market

This structured approach not only facilitates compliance but also builds investor trust and supports long-term sustainable growth.

European ESG Market and How SEBI Framework Use it:

The European ESG bond market has been a global leader in sustainable finance, setting benchmarks for transparency, standardization, and investor confidence. European frameworks such as the EU Taxonomy, Corporate Sustainability Reporting Directive (CSRD) with the European Sustainability Reporting Standards (ESRS), and regulatory oversight by the European Securities and Markets Authority (ESMA) have collectively advanced the market without necessitating additional standalone ESG bond frameworks.

Europe's ESG bond market benefits from mature regulatory ecosystems and harmonized standards that facilitate comparability and reduce greenwashing risks. The EU Taxonomy provides a science-based classification system for environmentally sustainable economic activities, which underpins bond eligibility and reporting. The CSRD and ESRS mandate comprehensive sustainability disclosures with a double materiality perspective, ensuring companies report on both financial and environmental impacts.

SEBI's 2025 ESG Debt Securities Framework aligns closely with these European standards, adopting recognized taxonomies and emphasizing transparency through mandatory disclosures, independent Second Party Opinions (SPOs), and rigorous post-issuance reporting. This alignment supports interoperability and investor comparability, enabling Indian issuers to attract global capital without the complexity of managing multiple divergent frameworks.

ESMA's regulation of ESG ratings and benchmarks such as the Climate Transition Benchmark (CTB) and Paris-Aligned Benchmark (PAB) further complement the EU's sustainable finance architecture. These mechanisms enhance market integrity and provide investors with reliable tools to assess ESG performance.

India's SEBI framework benefits from this European precedent by leveraging established standards rather than creating parallel frameworks. This approach facilitates smoother integration into global capital markets, enhances investor confidence, and supports the growth of India's sustainable finance ecosystem.

Case Study: L&T's First SEBI-Compliant ESG Bond

Larsen & Toubro (L&T), a leading Indian engineering and infrastructure conglomerate, issued India's first ESG bond under SEBI's 2025 ESG Debt Securities framework. This landmark issuance reflects L&T's commitment to sustainable finance and aligns with its broader environmental and social governance goals.

Bond Details

Issuer	Larsen & Toubro
Issue Size	₹500 crore
Coupon	6.35%
Tenor	3 years (matures June 2028)
Listing	NSE

Lead Arranger	HSBC
ESG Linkage	Freshwater withdrawal intensity & GHG emissions intensity

Strategic ESG Alignment, Implementation and Reporting

L&T's issuance is closely linked to its ambitious sustainability targets, including water neutrality by 2035 and carbon neutrality by 2040. The company's Planet–People–Governance framework and taxonomy-mapped Green Business segment (53% of FY25 revenue) provide a robust foundation for defining and measuring KPIs. The bond's KPIs focus on freshwater withdrawal intensity and Scope 1+2 GHG emissions intensity, with baselines set from FY 2024–25 data. L&T commits to annual KPI reporting with third-party assurance, ensuring transparency and accountability.

Market Impact and Significance

This issuance sets a precedent in India's sustainable finance market, demonstrating corporate readiness and investor confidence under SEBI's new regulatory framework. It also provides a benchmark for future ESG bond issuances in the country.

Larsen & Toubro's (L&T) pioneering issuance of India's first SEBI-compliant ESG bond in June 2025 positioned it as a first mover, showcasing corporate readiness and setting a benchmark for transparency and accountability. Despite this progress, many corporates remain cautious or unclear about adopting ESG debt instruments due to challenges such as understanding complex frameworks, aligning KPIs with business strategies, and managing ongoing reporting obligations.

Governance & Data Infrastructure

L&T's systems enabled issuance-grade KPIs:

Freshwater withdrawal intensity

Scope 1+2 GHG emissions intensity

Baselines referenced FY 2024–25 values, with 3-year SPTs calibrated to neutrality pathways. Assurance combined internal audit with external limited assurance.

Investor Perspectives & Market Reception

Investor sentiment towards ESG bonds in India has evolved positively post-SEBI's 2025 framework introduction. There is a marked preference for Use of Proceeds (UoP) bonds, driven by their clear linkage to specific sustainable projects and transparent reporting mechanisms, which provide investors with measurable outcomes and risk mitigation.

Sustainability-Linked Bonds (SLBs) have garnered constructive interest, particularly when Key Performance Indicators (KPIs) are material, ambitious, and subject to independent audit, ensuring credibility and alignment with corporate sustainability goals.

Larsen & Toubro's (L&T) pioneering ESG bond issuance has played a pivotal role in strengthening investor confidence. The bond's robust KPI alignment, disciplined disclosure practices, and taxonomy mapping have set a benchmark, demonstrating the viability and transparency of ESG debt instruments in the Indian market.

However, market reception also reflects cautious optimism. Investors recognize the nascent stage of India's ESG bond market, emphasizing the need for enhanced ESG data quality, standardized reporting, and greater corporate engagement to fully realize the potential of sustainable finance.

Sectoral interest is concentrated in renewable energy, clean transportation, and infrastructure, aligning with India's broader sustainability priorities. The market also anticipates increased participation from institutional investors as regulatory clarity and market practices mature.

Overall, investor perspectives underscore a growing alignment between financial returns and sustainability impact, positioning ESG bonds as a critical tool for India's sustainable development financing.

Methodology

This study employs a rigorous, multi-step methodology grounded in comprehensive data sourced from Larsen & Toubro's (L&T) sustainability disclosures, annual integrated reports, and Business Responsibility and Sustainability Reporting (BRSR) submissions to SEBI and other stakeholders, specifically referencing the FY 24-25 disclosures.

L&T's ESG policies and governance structures form the foundation of this study. The company's sustainability strategy is anchored in ambitious targets such as achieving carbon neutrality by 2040 and water neutrality by 2035. These targets are operationalized through detailed project-level initiatives focusing on resource efficiency, emissions reduction, water conservation, green building certifications, and biodiversity enhancement.

Data is meticulously captured and presented through L&T's BRSR reports, which comply with SEBI's disclosure mandates and align with international sustainability standards. Key performance indicators (KPIs) such as freshwater withdrawal intensity, Scope 1 and 2 greenhouse gas emissions, water sustainability metrics, and green building certifications are tracked with precision. The reporting process includes annual third-party assurance and internal audits to ensure data integrity, transparency, and reliability.

Key Performance Indicators (KPIs) of L&T

Freshwater Withdrawal Intensity	Targeting water neutrality by 2035, with annual reductions benchmarked against FY 24-25 baselines
Scope 1 and 2 GHG Emissions Intensity	Aligned with carbon neutrality by 2040, with science-based targets validated by third-party assurance
Green Building Certifications	Tracking LEED and GRIHA certifications across projects to

	demonstrate sustainable construction practices

L&T's Achievement in FY 2024-25:

KPI 1 – Freshwater Withdrawal Intensity (Water Neutrality by 2035)

	FY 2024-25
Water Recycling and Harvesting	2.6 million kiloliters of wastewater recycled across project sites and campuses 0.1 million Kiloliters of rainwater harvested
Water Sourcing & Consumption	The overall *reported* freshwater sourcing and consumption (including groundwater, surface water, and third-party sources) has increased vs. previous year mainly due to expanded data coverage across more sites
Water Neutrality Pathway	Continued focus on water-efficient processes, increased wastewater reuse, rainwater harvesting, and community groundwater recharge as key strategies for long-term water sustainability
Water Withdrawal Intensity	The Integrated Annual Report notes a water consumption intensity of ~108 kL per ₹ crore of revenue in FY 2024-25

KPI 2– Scope 1 and 2 GHG Emissions Intensity (Carbon neutral by 2040)

.	FY 2024-25
Scope 1 + Scope 2 Emissions Intensity	L&T's GHG emissions intensity is reported in the Integrated Annual Report as ~6.2 tCO_2e per ₹ crore of revenue (a reduction of ~20% year-on-year).
Trend & Progress	The company attributes the reduction mostly to decreased energy intensity and improved energy sourcing practices (e.g., more renewable energy use)
Carbon Neutrality Commitment	L&T has a long-term aspiration to achieve carbon neutrality (Scope 1 & 2) by 2040

KPI 3 - Green Building Certifications

.	FY 2024-25
L&T Data Center-1, Kancheepuram	IGBC Platinum rating
Chennai campus building	IGBC Net Zero design rating
Multiple (reported 14) green buildings certified at various locations	

Comparison with FY 2022-23, 2023-24 data:

	FY 2022-23	FY 2023-24	FY 2024-25
Water Consumption Intensity (kL per ₹ crore)	~102 kL/₹ Cr	~102 kL/₹ Cr	~108 kL/₹ Cr
GHG Emissions Intensity (tCO_2e per ₹ crore)	8.9 tCO_2e/₹ Cr	7.8 tCO_2e/₹ Cr (Reduction ~12.2% vs FY 2022-23)	~6.2 tCO_2e/₹ Cr (Further reduction trend)
Green Building Credentials	Multiple buildings certified; ongoing IGBC and LEED projects	Continued focus on green building portfolio with certifications maintaining high standards (Platinum, Net Zero design)	L&T Data Centre-1 (IGBC Platinum), Chennai Campus (IGBC Net Zero), plus ~12 others certified

Key Observations:

Water intensity was relatively stable between FY 2022-23 and FY 2023-24 (~102 kL/₹ Cr) — reflecting similar consumption relative to revenue. In FY 2024-25, reported water intensity shows a modest uptick to ~108 kL/₹ Cr, partly due to broader data coverage and increased measurement scope across sites. L&T continues to invest in wastewater recycling (~2.6 million kL in FY 2024-25) and rainwater harvesting (~100,000 kL), supporting water sustainability goals

L&T's GHG intensity has declined steadily over three years - From 8.9 in FY 2022-23 to 7.8 in FY 2023-24 (~12% year-on-year reduction). Further down to ~6.2 in FY 2024-25 (~20% reduction relative to FY 2023-24). The improvements are driven by energy efficiency gains and reduced energy intensity, along with increased—but still modest—renewable energy adoption

Emission targets -L&T targets carbon neutrality by 2040 and continues to implement decarbonization strategies across Scope 1 and Scope 2 emissions. Green building certification activities have expanded over time, with L&T both constructing and certifying buildings **to IGBC Platinum and Net Zero standards,** supporting a broader sustainability strategy

Assurance and Verification

L&T employs a combination of internal audits and independent third-party limited assurance to validate KPI data. Assurance reports are integrated into annual BRSR disclosures, enhancing transparency and investor confidence. Continuous improvement in data governance and assurance processes is recommended to meet evolving SEBI and international standards.

Corporate Perception and Market Dynamics

First Mover Advantage: L&T leveraged early adoption to enhance its sustainability credentials and investor confidence.

Market Hesitancy: Other corporates exhibit uncertainty due to evolving regulatory expectations, resource constraints, and the need for robust ESG data infrastructure.

Suggestions to Indian Corporates

Key Areas	**Description**
Adopt Robust KPI Frameworks	Align KPIs with SEBI and ICMA guidelines, ensuring ambition and measurability
Enhance Assurance Practices	Invest in third-party verification and internal controls to build investor trust
Leverage European Benchmarking	Use EU Taxonomy and CSRD standards as references for improving disclosure quality and comparability
Engage Stakeholders Proactively	Transparent communication with investors, regulators, and rating agencies to foster market confidence
Build Data Infrastructure	Develop integrated ESG data management systems to support real-time monitoring and reporting

Continued alignment with global standards will facilitate cross-border capital flows and investor diversification. Strengthening assurance and transparency mechanisms will mitigate greenwashing risks and enhance market integrity. Indian corporates can leverage first-mover advantages by adopting best practices from European benchmarks and ICMA principles. These recommendations aim to support the maturation of India's ESG bond market, ensuring sustainable growth, investor confidence, and alignment with global sustainable finance trends.

CONCLUSION

Larsen & Toubro (L&T) has emerged as a clear leader in India's ESG bond market, successfully navigating SEBI's 2025 ESG Debt Securities framework well ahead of many corporates that continue to exhibit hesitancy even six months after the framework's publication. L&T's proactive approach, robust governance, and transparent reporting have set a high benchmark, demonstrating that early adoption not only builds investor confidence but also strengthens corporate sustainability credentials.

Despite the promising regulatory environment, many Indian corporates remain cautious, grappling with the complexities of ESG bond issuance, KPI alignment, and ongoing disclosure obligations. To bridge this gap, L&T and other market leaders can play a pivotal role by sharing best practices, offering guidance on framework compliance, and fostering collaborative platforms to demystify ESG financing.

Several prominent Indian companies, including ITC and Unilever, have articulated ambitious sustainability strategies and are progressively aligning their financing approaches with ESG principles. ITC's multi-vector strategy under 'ITC Next' emphasizes climate-smart farming, sustainable packaging, and digital transformation, supported by significant investments in sustainability initiatives. Unilever India continues to integrate sustainability deeply into its business model, focusing on climate, nature, plastics, and livelihoods, with comprehensive ESG disclosures and ongoing performance improvements.

For these and other corporates, the path forward involves:

Embracing SEBI's framework with tailored ESG bond structures suited to their operational realities.

Developing measurable, ambitious KPIs aligned with both national and international standards.

Investing in data infrastructure and assurance mechanisms to ensure transparency and credibility.

Engaging proactively with investors, regulators, and rating agencies to build trust and market acceptance.

By learning from L&T's pioneering experience and leveraging global best practices, Indian corporates can accelerate their ESG bond market participation, contributing meaningfully to the country's sustainable development goals and unlocking new avenues for capital.

In conclusion, L&T's leadership exemplifies the tangible benefits of early and committed ESG integration in corporate finance. As India's ESG debt market matures, collaborative efforts among corporates, regulators, and investors will be essential to overcome hesitancy, enhance market depth, and position India as a credible player in the global sustainable finance ecosystem.

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